SECTION 707
JOINT MATERIALS

707.01 CONCRETE JOINT FILLERS.

707.01.1 Concrete Pavement.

A. **Expansion Joint Filler.** Furnish expansion joint filler type II cork meeting AASHTO M 153 requirements.

B. **Joint Sealing Material.** Furnish sealing material for all types of pavement joints that is a hot-poured thermoplastic rubber or rubber asphalt compound meeting AASHTO M 173, furnished in one grade only. Use ready-mixed, cold applied joint fillers for sealing concrete pavement joints only with the Project Manager's prior written approval.

707.01.2 Concrete Structures Other Than Pavement. Furnish Type II cork pre-formed expansion joint filler meeting AASHTO M 153 requirements.

707.01.3 Concrete Curbs, Gutters, Sidewalks. Use joint material for concrete curbs, gutters, and sidewalks meeting AASHTO M 213 requirements.

707.02 CULVERT SEALERS.

707.02.1 Rubber Gaskets. Furnish ring gaskets meeting AASHTO M 198 requirements.

707.02.2 Flexible Plastic Gaskets. Furnish flexible plastic joint compounds produced from refined hydrocarbon resins and plasticizing materials reinforced with inert mineral filler and not containing solvents. Cohesive and adhesive strength must not be developed by oxidation, evaporation, or chemical action. Supply the gasket in extruded rope form, sized to fill spaces between the pipe sections. Furnish with a two-piece removable wrapper that permits removing one half without disturbing the other half.

Meet the following requirements:

TABLE 707-1

COMPOSITION AND PROPERTIES—FLEXIBLE PLASTIC GASKETS			
		Minimum	**Maximum**
Bitumen (petroleum plastic content)	ASTM D 4	50	70
Mineral Matter (Ash Inert)	AASHTO T 111	30	50
Penetration	ASTM D 217 Cone		
0°C (300 gm) 60 sec		75	—
25°C (150gm) 5 sec		50	120
46.1°C (150 gm) 5 sec		—	150
Softening Point at 25°C Min	ASTM D 36	160°C	—
Specific Gravity at 25°C	ASTM D 71	1.20	1.35
Weight per gallon		10.4	11.25
Ductility at 77(cm) min	ASTM D 113	5.0	—
Flash Point C.o.c., °C	ASTM D 92	315.5	—
Fire Point C.o.c., °C	ASTM D 92	329	—
Volatile Matter	ASTM D 6	—	2.0

707.03 SHEET COPPER, RUBBER, AND PLASTIC WATERSTOPS.

707.03.1 Sheet Copper. Furnish sheet copper for waterstops meeting ASTM B 152 requirements for copper sheet, strip, plate, and rolled bar, type ETP with a nominal weight of 16 ounces per square foot (5 kg per m^2) plus or minus 8%.

707.03.2 Rubber. Furnish molded or extruded rubber waterstops having a uniform cross section, free from porosity or other defects, and meeting the nominal dimensions specified in the Contract. An equivalent standard shape may be furnished if approved. The waterstop may be compounded from natural rubber, synthetic rubber, or a blend of the two, together with other materials that produce a finished waterstop meeting Contract requirements. Reclaimed material cannot be used. Furnish a manufacturer's certificate showing the material composition and the values for the designated properties in Table 707-2. Furnish samples when requested.

TABLE 707-2
PROPERTIES AND TEST METHODS — FINISHED RUBBER WATERSTOP

PROPERTY	FEDERAL TEST METHOD STANDARD NO. 601	REQUIREMENT
Hardness (shore durometer)	3021	60 to 70
Compression set	3311	30% Max.
Tensile strength	4111	2,500 psi Minimum (17 Mpa)
Elongation at breaking	4121	Minimum 450%
Tensile stress @ 300% elongation	4131	Minimum 900 psi (6Mpa)
Water Absorption by weight	6631	Maximum 5%
Tensile strength	7111	Minimum 80% after aging original

707.03.3 Plastic. Furnish plastic waterstops manufactured from virgin polyvinyl chloride plastic or other material meeting Table 707-3 requirements.

TABLE 707-3
PROPERTIES AND TEST METHODS-FINISHED PLASTIC WATERSTOP

ASTM STANDARD	PROPERTY	REQUIREMENT
D 2240	Hardness	75±5
D 412	Tensile Strength, min	2000 psi (14 MPa)
D 412	Ultimate Elongation, min	350%
D 746	Low Temperature	
Procedure B	Brittleness at -37°C	No Failure

Furnish for approval, a drawing or catalog cut of the waterstop intended for use, and a written certificate from the manufacturer that the waterstop meets the specifications.